



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/828,966	04/21/2004	Jay Korth	WAB 04112	5361

7590 06/23/2006  
JAMES RAY & ASSOCIATES  
2640 Pitcairn Road  
Monroeville, PA 15146

EXAMINER

AFZALI, SARANG

ART UNIT	PAPER NUMBER
----------	--------------

3729

DATE MAILED: 06/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/828,966

Applicant(s)

KORTH ET AL.

Examiner

Sarang Afzali

Art Unit

3729

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) 14 and 16 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 15 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 April 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 04212004.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

**DETAILED ACTION**

***Election/Restrictions***

1. This application contains claims directed to the following patentably distinct species:

Species A, drawn to an embodiment with mechanical bonding, Claim 6;

Species B, drawn to another embodiment with adhesive bonding, Claim 16;

If applicant elects Group I, applicant must elect one of the following species:

Species C, drawn to Fig. 7, Claim 13; and

Species B, drawn to Figs. 3 and 6, Claim 14.

Applicant is required under 35 U.S.C. 121 to elect a single disclosed species for prosecution on the merits to which the claims shall be restricted if no generic claim is finally held to be allowable. Currently, claims 1-9 are generic.

Applicant is advised that a reply to this requirement must include an identification of the species that is elected consonant with this requirement, and a listing of all claims readable thereon, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered nonresponsive unless accompanied by an election.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which depend from or otherwise require all the limitations of an allowable generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

MPEP § 809.02(a). During a telephone conversation with Richard Byrne on 6-13-2006

an election was made without traverse to prosecute the invention of Species A, claim 6 and Species C, claim 13. Affirmation of this election must be made by applicant in replying to this office action. Claims 14 and 16 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### ***Drawings***

2. The drawings are objected to because of poor quality. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

3. The disclosure is objected to because of the following informalities:

In specification as amended on 4/21/2004, line 6, add - - now abandoned - - after 2002.

4. Appropriate correction is required. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: A METHOD FOR MAKING A FLAT-ROUND JOINT IN A "CT" OR "SERPENTINE" FIN CORE.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6, 13, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damsohn et al. (US 5,749,414) in view of Melnyk (4,546,824).

Regarding claims 1-5, Damsohn et al. discloses all the claimed limitations including the bonding between end of tube and header with the exception of explicitly disclosing a circular tube end and circular opening in the header. Melnyk discloses a heat exchanger comprising a plurality of generally oblong coolant tubes 20, serpentine fins 22 and a header member 16 having a plurality of circular openings 38 therein

Art Unit: 3729

receiving circular tube ends for the purpose of improving the tube to header joint (column 1, lines 10-28).

Since Damsohn et al. and Melnyk are both from the same field of endeavor and/or analogous art, the purpose disclosed by Melnyk would have been recognized in the pertinent art of Damsohn et al. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Damsohn et al. circular tube ends for the purpose of improving the tube to header joint as recognized by Melnyk.

Regarding claim 6, the step of welding of Damsohn et al. is read as a step of forming a "bond mechanically".

Regarding claim 13, Damsohn et al. discloses two staggered rows of generally oblong tubes 1 (Figure 1).

Regarding claim 15, Damsohn et al. discloses that the first predetermined diameter (of the opening 7, Figure 2) is slightly larger (by 0.1 mm, column 3, lines 16-19) than the second predetermined diameter (outer circumference of the tube 1).

7. Claims 7 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damsohn et al. in view of Melnyk and further in view of Stafford et al. (US 4,579,171). Damsohn et al./Melnyk discloses all the claimed limitations with the exception of the "rolling" step of claim 7 and forming "threads" of claim 12.

Stafford et al. discloses a heat exchanger comprising a tubesheet 14 mechanically bonded with tube 2 by rolling (column 3, line 46) with threading 32 for the purpose of improving bond strength and fluid tightness. Since Damsohn et al., Melnyk, and Stafford et al. are all from the same field of endeavor and/or analogous art, the purpose disclosed by Stafford et al. would have been recognized in the pertinent art of Damsohn et al. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Damsohn et al./Melnyk mechanical bonding formed by rolling with threads for the purpose of improving bond strength and fluid tightness as recognized by Stafford et al.

8. Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damsohn et al. in view of Melnyk and further in view of Gerber et al. (US 4,500,030). Damsohn et al./Melnyk discloses all the claimed limitations with the exception of the inserting the end of tube into the opening of the header to extend through the thickness of claim 8 and removing that excess portion after the bonding step of claim 9.

Gerber et al. teach a method of bonding manifold pipes to a flange of an engine manifold system wherein end of tube 14 is inserted and extended through the thickness of the flange 12 to prevent the weld material from entering the tube during the bonding step (welding) and thereafter the excess portion is removed to enable proper mounting of the flange on the engine head (column 6, lines 31-47). Since Damsohn et al., Melnyk, and Gerber et al. are all from the same field of endeavor and/or analogous art, the purpose disclosed by Gerber et al. would have been recognized in the pertinent art

of Damsohn et al. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Damsohn et al./Melnyk the tube insertion before the bonding step and removing the excess portion of the inserted tube after bonding step for the purpose of providing an improved fluid tight joint as recognized by Gerber et al.

9. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Damsohn et al. in view of Melnyk and further in view of Colvin et al. (5,099,575). Damsohn et al./Melnyk discloses all the claimed limitations with the exception of an internal tool of claim 10 and an external tool of claim 11. Colvin et al. teach a method of connecting coolant tube and a header of a heat exchanger wherein a sizing tool 70 including an internal tool portion 72 having a generally circular cross section and an external tool portion 98 having a generally hollow circular cross section (Figure 12) is inserted into the end of tube 20 to provide a rolled surface 92 of the tube 20 to provide a positive contact lock between the tube 20 and header 22 and further provide a transitional opening in the tube 20 for fluid communication with the manifold fluid reservoir 16 (column 7, lines 29-46). Since Damsohn et al., Melnyk, and Colvin et al. are all from the same field of endeavor and/or analogous art, the purpose disclosed by Colvin et al. would have been recognized in the pertinent art of Damsohn et al./Melnyk. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to employ in Damsohn et al./Melnyk the sizing tool for the

purpose of providing an effective and positive contact lock between the tube and header as recognized by Colvin et al.

**Conclusion**

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sarang Afzali whose telephone number is 571-272-8412. The examiner can normally be reached on 7:00-3:30 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Peter Vo can be reached on 571-272-4690. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

S.A.  
SA  
6/19/2006

  
DAVID P. BRYANT  
SUPERVISORY PATENT EXAMINER